

**CLAIMS**

1. Membrane consisting of a biocompatible polymer, for decontamination of food liquids from chemical and/or biological contaminants characterized in that said polymer is in the form of woven or non-woven fabric and in that antibodies  
5 specific for said contaminants are covalently linked to the membrane.
2. Membrane as claimed in claim 1 wherein said polymer is chosen in the group consisting of: nylon, cellulose, polyacrylates, polyester, polypropylene, their derivatives and mixtures thereof.
3. Membrane as claimed in claim 2 wherein said polymer is nylon, cellulose  
10 and derivatives thereof, and wherein said antibodies are linked to the membrane through a linker selected from the group consisting of:  $\text{-CH}_2\text{-CH}_2\text{-SO}_2\text{-CH}_2\text{-CH}_2\text{-NH-}$   $(\text{CH}_2)_4\text{-N=CH-}(\text{CH}_2)_3\text{-CH=O}$  or a peptide comprising a diamino-monocarboxylic amino acid or a monoamino-dicarboxylic amino acid.
4. Membrane as claimed in claim 3, wherein the diamino-monocarboxylic amino  
15 acid is chosen between Arginine and Lysine and the monoamino-dicarboxylic amino acid is chosen between Glutamic Acid and Aspartic Acid.
5. The membrane as claimed in claims 1 to 4, wherein said contaminants are chosen in the group consisting of: parasiticides, weed-killers, pesticides, drugs and metabolites thereof, hormones and metabolites thereof, wine malolactic  
20 fermentation products, and toxins.
6. The membrane as claimed in claim 5, wherein said contaminants are chosen in the group consisting of: atrazine, aflatoxin, ochratoxin, fumonisine, cadaverine, putresceine, urethane, progesterone and salmonella antigen.
7. The membrane as claimed in claim 3, wherein said biocompatible polymer is  
25 nylon 66.
8. The membrane as claimed in any of claims 1 to 7, wherein said antibodies are polyclonal antibodies.
9. Process for the decontamination of a food liquid from one or more chemical and/or biological contaminants, based on the contact of said liquid with a  
30 membrane consisting of a biocompatible polymer and wherein antibodies specific for said contaminants are covalently linked to said membrane or to the membrane surface.
10. The process as claimed in claim 9 wherein the said contact takes place by

immersion of said membrane in the liquid to be decontaminated.

11. The process as claimed in claim 9-10 wherein the biocompatible polymer is selected from: nylon, cellulose, polyacrylate, polyester or viscose, their derivatives or mixture thereof.

5 12. The process as claimed in claim 11 wherein said polymer is in the form of woven non woven fabric.

13. The process as claimed in claim 12 wherein the membranes are those according to claims 1-8.

10 14. The process as claimed in claims 9-13, wherein said contaminants are chosen in the group consisting of: parasitocides, weed-killers, pesticides, drugs and metabolites thereof, hormones and metabolites thereof, wine malolactic fermentation products, and toxins.

15 15. The process as claimed in claim 14, wherein said contaminants are further chosen in the group consisting of: atrazine, aflatoxin, ochratoxin, fumonisine, cadaverine, putresceine, urethane, progesterone and salmonella antigen.

16. The process as claimed in claim 10, wherein said membranes are kept immersed in the liquid for a period ranging from 1 to 24 hrs.

17. The process as claimed in claim 16, wherein the said membrane is kept immersed in the liquid for a period ranging from 1 to 6 hrs.

20 18. The process as claimed in anyone of claims 9-17 which is performed without stirring.

19. The process as claimed in anyone of claims 9-18, wherein the said food liquid is chosen among: wine, milk, fruit juice, vegetables juice, beer, water.

25 20. The process as claimed in anyone of claims 9-19, wherein the total surface of the membrane/s for contaminant is such that the molar ratio of the immobilised antibody to the contaminant toward which the antibody is directed is  $\geq 1$ .

21. The process as claimed in claim 20, wherein the said molar ratio ranges from 1 to 5.

30 22. The process as claimed in claim 21, wherein the said molar ratio ranges from 1 to 2.

23. Use biocompatible polymer membranes carrying antibodies specific for chemical and/or biological contaminants covalently linked to them and wherein said biocompatible polymer is selected from the group consisting of: nylon,

cellulose, polyesters, polyacrylates their derivatives or mixtures thereof for decontamination of food liquids. .

24. Use of membranes as claimed in claim 23 wherein said use consists in a contact by immersion of said membranes in the liquid to be decontaminated.

5 25. Use of membranes as claimed in claim 24 wherein the said contaminants are chosen in the group consisting of: parasitocides, weed-killers, pesticides, drugs and metabolites thereof, hormones and metabolites thereof, wine malolactic fermentation products, and toxins.

10 26. Use of membranes as claimed in claim 26 wherein the said contaminants are further chosen in the group consisting of: atrazine, aflatoxin, ochratoxin, fumonisine, cadaverine, putresceine, urethane, progesterone and salmonella antigen.